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THE opening of the New York State Capitol, last week, incomplete as the building still is, — only about a quarter of it being yet ready for occupancy, — is the most important architectural event of our day since the completion of the United States Capitol at Washington. The building will be in fact, if it is carried out in the spirit in which the work is now going on, the next in point of cost to that at Washington; for while its dimensions are considerably less, it is finished on a scale of greater magnificence and of more genuine and durable, and therefore of more costly material. We give on another page a careful and detailed account of the building as it now is, which will be read with interest, we think, by those who have seen it as well as by those who have not. Whatever may be the opinions of those who see the building, as to the original merits of the battle between its architects, or the special criticisms to which in its present estate it is open, there can be no serious question that as an artistic achievement the building has gained very greatly by its change of architects. The unity of a harmonious whole it can never have. The architects who are now in charge of it will not sacrifice the individuality of their own ideas to the beginnings of their predecessors enough to secure this, nor can they for its sake sufficiently harmonize their diverse manners of working in the separate portions into which they have wisely divided it among themselves. Thus the stimulating influence which it will unquestionably have as an example of design will lose something in this respect. But instead of the monument of commonplace splendor which was originally promised, we have now a work which in its different parts is up to the highest level of professional attainment. We have work of vigor, individuality, and artistic power, which, in spite of a forced conformity to an original scheme that does not suit with it, and that involves many shortcomings in the final result, will give it a place of permanent honor.

THE opening ceremonies were of great splendor, ten thousand or more persons being gathered in the building, it is estimated. The people of New York are proud of their capitol if we may judge by the criticisms in the city papers, most of which have described the building at length, and with liberal admiration. There are those who scold about the cost of it, and some papers have no good word for its architecture. Thus the *Commercial Advertiser*, in its account of the opening, wonders that "the idea never entered the stupid heads of the architects and the commissioners" to provide more room for spectators in the galleries of the assembly chamber, or that this room and the senate chamber should be remanded to the upper story; and thinks that there is no public building in the country so badly arranged. It does not stop to remember that these faults were essentially fixed upon the building before the commissioners and their advisers meddled with it, nor to concern itself with the serious labors of the architects further than to say that "the architectural display is a mixture of High and Low Dutch, Bruyn, Eidlitz, and Dorscheimer." So much for popular appreciation of the highest artistic effort, — an appreciation which is less encouraging than that of the critics who have set the Romanesque architecture beneath the Renaissance, because it betokens less interest.

WE have seen very reckless estimates of the amount of money that has been spent on the building thus far, ranging from seven to sixteen millions of dollars. Up to 1876, when the change of architects was made, more than seven millions had been appropriated for the building, and the most of this had been spent. Since then the total appropriation has reached nine and a half millions, and the expenditure over nine millions. The estimate of the Advisory Board for finishing the building according to their original design was four and a half millions; but the design has been changed, and some millions more will be needed, — how much, probably no one can say accurately. Governor Robinson, in the first message delivered to the legislature in their new quarters, summed up its history reproachfully, and recalled the restriction under which money was first voted for it, — that the whole cost should be limited to four millions. He reminded the legislature that only one wing out of four was as yet completed, and urged that, although the adoption of the original plan had made the restriction impossible, it was possible to finish it in much simpler style than was intended, and that the unfinished parts, although long uncovered, had not suffered, nor were likely to. He therefore recommended the legislature to stop its appropriations for the time, and insist upon deciding how it should be finished and at what cost. The people, he said, were ill able to pay the tax demanded for it, and he added: "If we concede the artistic merit claimed for the present design, it yet seems to me that in times like these the food and raiment of our people are more to them than the development of schools of art." One is tempted to wonder who persuaded the governor that unfinished work exposed to the weather did not suffer from the exposure. With the ability of the people of New York to pay the tax demanded, or with the question of "schools," we need not meddle now; but there are those who think that the development of art is a thing worth considering even beside food and raiment, so long as it is not a question of actual destitution. There are persons who like, after they find themselves decently clad and comfortably fed, instead of spending more in that direction, to spare it for a picture or a bit of decoration, or for something else that depends upon the development of art. One cannot have the architecture of a state-house, or a hall of assembly, or even a great mural painting in his own house, as he can have a picture; but then those things are visible to a great many people, and cost much less per head, besides being monuments for generations.

TWO other States, Connecticut and Michigan, have in like manner celebrated their New Year by occupying their new capitols. The Connecticut capitol, at Hartford, of whose main staircase we not long ago published a drawing (see *American Architect*, November 9, 1878), has been building since 1872, from the designs of its architect, Mr. Richard M. Upjohn. It is an imposing building of white marble, vigorously grouped and rich in detail, treated in the broad and rather horizontal Gothic which Mr. Upjohn is fond of adopting in his civic work. Its design must be tolerably familiar to most of our readers; and we shall not attempt any description of it until we are able to lay it before them in illustrations. It was soon after the oscillating legislature of Connecticut decided to fix itself at Hartford, that a new capitol was decided on. The state appropriated half a million dollars for it on condition that the city should do the same, and should provide a site. The city bought the grounds of Trinity College, adjoining its own park, and gave them for the purpose, receiving in exchange the title to the old capitol at Hartford when it should be disused. In a competition for designs Mr. Upjohn's was accepted, and contracts for it were made in October, 1872, the cost being fixed at eight hundred and seventy-five thousand dollars. When the work had gone on for a year the legislature decided to change the character of the building, making it fire-proof throughout, and increasing its elegance. A new commission was appointed, with power to get new plans and increase the cost to a million and a half. The commission finally settled upon a modification of Mr. Upjohn's design, on which, to suit their idea of due dignity, they had obliged him to engraft a dome. This was authorized by the legislature and new contracts signed while the limit of cost was extended to two millions and a half. The building is now done as far as its practical uses are concerned, and was formally occupied by the legislature last week. The only things that remain to be done for the building itself are to finish the dome, of which half the panelling of the brick shell is in place, and some details of the roofing and sculpture, all of which, the commissioners say, will be included within the appointed cost.

A characteristic and, for American architects, unusual thing in the design is the amount of figure sculpture that is disposed about it. A colossal winged bronze, typifying the Genius of Connecticut, stands on the lantern, and twelve figures are to crown the pillared buttresses of the dome below, which is dodecagonal in plan. Some of these are finished, but they are not to be placed till the spring. Besides these, canopies and pedestals are provided on the fronts for twenty-two other statues, and the tympana of seventeen arches are to be filled with historic sculpture. Upon one of them, as the commissioners say naïvely in their official report, they "have had carved a correct likeness of the historic Charter Oak tree." The people of Connecticut, as well as those of New York, can afford to be proud of their state house. They might have had still more reason for gratulation, we believe, if their commission had not yielded to the besetting temptation to interfere with the architect in his own domain, forcing upon him a dome which all his skill has not been able to make fraternize entirely with the rest of his architecture; and, if we mistake not, their hand is to be seen in some other details of the work.

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The Michigan legislature occupied their new building on the first day of the year; and the people of the State are congratulating themselves that it has been completed, substantially, within the original estimate, and in the time agreed upon. The legislature were fairly frightened out of their former capitol in 1871, partly by a timely fire that gave warning of its combustibility, and partly by a yielding of the floor of the State Library, which threatened to fall upon the legislators beneath. A building commission was straightway appointed, a limit of $1,200,000 fixed for its cost, and a competition for plans opened. Mr. E. E. Meyers was selected in the competition as architect, a contract for the building was made within the prescribed limit, and the corner stone was laid in October, 1873. The actual cost of the complete work is $1,390,000, which includes some small items ordered by the legislature, in addition to the original contract, the chief of which are a steam-heating apparatus, and a stone cornice and balustrades wisely substituted for the original cheaper and inferior feature. The building is an oblong of 336 feet front and 180 feet deep, built of Amherst sandstone. It consists of three projecting masses, a centre and two wings, connected by recessed curtains. It is of modern classic architecture, three stories over a rusticated basement, the projecting portions faced with an applied order in each story. The central mass carries an attic. The roofs are flat and balustraded, with low pediments over the centre and wings. Out of the middle rise a dome and lantern of unusually elongated profile; the drum of the dome being surrounded by a circular colonnade which rests on an octagonal stylobate, and is broken by a projection on each cardinal face. A two-storied portico with high steps marks the central entrance. This is the only one of the three new capitols in which is preserved the old ideal of a State capitol, — a classic building with porticos and a central dome, — an ideal which in these days seems to have taken refuge in the West.

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The various steam-heating schemes that are urged in New York do not seem to make great headway. The mayor has vetoed the last of them, the Webb scheme, at the very end of the expiring Aldermanic Board's term of office; so that, as the corporation counsel decides, there is no time for the old board to pass it over his veto, and the new board cannot take it up, since the unfinished work of the old goes out with it. At the same time the counsel has given the opinion that the Spinola concession, which was carried over the mayor's veto, is illegal, because it confers privileges which the city is not authorized by its charter to confer; because it contains no limit of duration, and reserves no right of revocation, and so would bind the city perpetually; and because it delegates to the Commissioners of Public Works powers which the City Government does not possess. If these objections are confirmed, the whole business will have to be begun *de novo*, and the question transferred to the legislature, with prospects of a different result, as other questions of the policing of New York city have been transferred. In the mean time, while the Lockport system is extending to other towns, practical questions are coming up which have not heretofore attracted much attention; for instance, how long a network of underground pipes can be expected to last, under a pressure of two hundred pounds to the inch, without bursting; and whether, when the length of pipes traversed becomes great, the condensation will not become expensive and annoying. The steam is delivered through meters, and the consumers are taxed accordingly; the question then occurs also whether the remote consumer, who receives his steam wet, that is, partially condensed, with a loss of some of its efficiency, shall pay as much for it as the near consumer, who receives it in its dry condition, almost direct from the boiler, — in other words, whether the remote consumer or the company shall bear the loss of the partial condensation of the steam in its course. But if the views of the corporation counsel prevail, there may be time to settle these and many other questions by experience elsewhere before the steam gets to New York.

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The death of Mr. Franz Xavier Dengler takes away from our country one of the most promising of her young sculptors, and one of the very few who have entered their profession with the advantage not only of talent, but of thorough training. He was of German race, but was born in Cincinnati, in 1854. His artistic promise was early. At seventeen years old he was sent to the Royal Academy of Fine Arts, at Munich, where he was a pupil of Wagmüller, and quickly distinguished himself, winning the admiration of the clever colony of Americans who were his fellow-pupils. After five years of study, he returned in 1876 to Cincinnati, where he worked for a year without attracting much attention, and then came to Boston. Here the spirit, the skilful technique, and the artistic feeling of his work brought him immediately into honor, so that he was soon engaged to take charge of the classes in modelling in the Schools at the Museum of Fine Arts. His careful training, freshness of feeling, and the enthusiasm with which he inspired his pupils made his teaching very successful, and promised admirable results from it; but the sudden development of consumptive symptoms obliged him, after a season's work at the Museum, to leave Boston. A year ago he went again to his home at Covington, then to Colorado, and to Florida, in search of a climate in which he could live; within a week the news of his death has come back. Naturally, he left but little finished work behind him, — a portrait-bust, a little group of statuary, a number of vases decorated with charming figures; but that little was full of promise. He was engaged to model the three figures in terra-cotta of painting, sculpture, and architecture, for which pedestals are set at the entrance to the Museum of Fine Arts; and his sketch models for them were nearly finished when he left Boston. Our country has not succeeded well in rearing a family of sculptors. It has been a habit of her indigenous sculptors to make themselves, with a little help from Congress. The most distinguished of the older ones have been persistent absentees. Of the two among her younger ones who have lately come back to her in all the promise of a solid training, fresh enthusiasm, and exceptional gifts, Mr. St. Gaudens has gone again to Paris, with no present indication of returning. Dengler has now been taken from her, and she does not know where to look for their successors.

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We are informed as we go to press that the Washington Monument Commission has decided in favor of Mr. Story's plan, and has recommended it to the Committee on Public Buildings and Grounds.

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## ARCHITECTS' COMPETITIONS.

### III. DISTRIBUTION OF PATRONAGE.

The considerations which we have thus far cited tend to show that architectural competitions are on the whole of doubtful benefit to the client; and that, except for certain advantages which we have yet to consider, it is questionable whether they are to be desired by architects themselves. Nevertheless clients believe them to be useful, and architects like the excitement of them. So they are popular, and will for the present continue to be so. It seems to a client to be a great advantage that he can have several ideas to choose from, instead of one. In cases where the problem is a difficult one there is some gain to him in this, provided only that he can get several ideas from the right kind of men, a gain which under good management might be of much value to him, though as things go it is pretty apt to come to naught. On the side of the profession it is not to be forgotten that competitions add nothing on the whole to its practice or emoluments. They make no additional work, that is, they do not increase the amount of building, but they do require a great deal of extra labor from architects, and so add consider-

ably to the burdens of the profession, and they in the long run rather diminish than increase its total compensation, we suspect; for while the extra premiums distributed, when there are any such, amount to virtually nothing in comparison with the whole amount of labor rendered in them, not only do competitions tend in too many cases to dishonorable undercutting, but committees make use of their attractions to offer a lower fee than they would have to give for the services of a well-accredited architect engaged in the ordinary way. This, then, gives additional force to the point on which we have before insisted, — that they are an exceedingly costly means of distributing patronage, and that the cost is to the architects.

On the part of architects, the most cogent arguments in favor of competitions are those to which we have already referred, — that they seem to offset the ascendency of individual reputation, and that they give an opportunity to young or unknown men to make their merits known, and secure their share of patronage. The ascendency of names is certainly one of the checks in the way of young practitioners. It is at the same time one of the reasonable rewards of a professional career. A professional man is entitled to the reputation which abundant and skilful service brings him, and it ought to be a source of profit to him. To make a well-earned reputation of no effect would certainly be an injury to any profession, for which any device for encouraging unknown ability would hardly be compensation; for it would destroy one of the strongest incentives to careful qualification, to diligence and faithfulness in practice, while it would invalidate what after all is the client's best security in choosing a professional adviser. It would encourage one of the crying evils of our profession by stimulating architects to give their attention rather to securing work than to doing it well. Therefore, the prevalence of a system which should neutralize the advantages of a professional reputation is by no means a thing to desire.

At the same time the great accumulation of work in a few hands which is often seen is a thing to be deprecated; for a few men are apt to have more in their hands than they can do their best by, and the architect who is tender enough of conscience to refuse to do more work than he can do well is scarcely to be found. There are some real benefits, then, in a system which gives capable but unknown men a chance against those whose reputations overshadow them. This is given to some degree by competitions. How far it is given, and how far its benefits countervail their disadvantages, are questions which it is not very easy to answer; to a crowd of hungry aspirants the benefits naturally loom large, and the disadvantages look small. It is of course only to open competitions that these benefits belong; but they, as we have argued, are those of which the advantage to the client is least, and which most encourage all the abuses of competitions; so that it is not well to commit ourselves too far to the advocacy of unlimited competitions without considering how their recommendations in this respect really weigh in the balance.

We can all cite instances where men of ability have been brought forward from obscurity by a competition design. The case of M. Garnier, architect of the Grand Opera at Paris, is a notable one. He was as unknown as any winner of the *prix de Rome* is likely to be, until his design for the Opera won in the great trial. Our readers' memories may furnish other examples nearer home. But there are two qualifying conditions to offset such examples. The men of exceptional ability who come to the front in competitions have commonly just the kind of ability which would bring them to the front without them. Those who win in one competition are those who win again and again; and they are those who are equally successful in securing employment where there are no competitions. One of the most prosperous architects in New York said once that it was a mere farce for him to go into a competition, for he always won; and it was true. So far as men who have a talent for success are concerned, competitions are after all only an additional means of enabling them to outstrip their slower-footed fellows. Experience does not show either that they are any more likely than other means to discriminate solid excellence from the dash or pretence that is apt to carry the day in a personal trial. The same showy qualities that prevail in the one case prevail in the other.

And then we may well question how great is the proportion of obscure talent that is brought to light by the fortuitous decisions — we cannot describe them in any more respectful way — of ordinary competitions. If some means could be enforced by which these decisions could be made to detect real merit, it would be an advantage to struggling practitioners, and still more a help to the course of good architecture. Under exceptionally good management, competitions may do this; but that it is their common result no one would be less inclined to argue than architects themselves. For one unknown ability that is brought into recognition, there are many cases of important works saddled with inferior designs, or intrusted to architects who prove untrustworthy or unskilful, inexperienced, visionary, or otherwise incapable. For whether or not competitions attract good architects, which they sometimes do and sometimes fail to do, the inexperienced, the shiftless, and the adventurers of the profession always flock to them. So long as they must be regarded as lotteries, in which the prizes are for the good, the bad, and the indifferent alike, it is much to be questioned how much the benefit of their encouragement offsets their abuses.

There is one way, however, in which competitions may do a considerable good to young architects, and that is, in giving them practice in designing for a purpose, and for works of greater scale than their ordinary practice would give them. The problems young men work over in the schools have necessarily an air of unreality; those that they study in offices they study without either the stimulus or the freedom of their own responsibility. Those that their clients intrust to them are apt to be comparatively small, and in the leisure intervals of early practice, it is to be feared, they are not assiduous in setting themselves tasks for practice. We once heard an architect of experience say that his advice to a beginner would be to go into every competition at which he could get a chance, for the mere sake of getting experience in designing. No doubt this was sound advice in its way. Competitions give admirable opportunities to unripe practitioners for learning one part of their business. But this gives the more reason for distrusting success in them. It is well for them to have the benefit of practice in design for actual uses, but that they should learn their business by costly experiments in building at the expense of their clients is undesirable. We are tempted to say that nothing would be so good for a young architect as to go into competitions, if he can only be assured of not winning in them. However it may be in more conservative countries than ours, or even here in professions that are better established than architecture, and their requirements better known, it is our impression that in the United States the way of the young architect is made too easy rather than too hard; that he is encouraged to go into practice without proper training, and to undertake important work before he is fitted for it; that therefore any contrivance for hurrying him into positions of responsibility, and saving him from the plodding that usually falls to young men, is to be looked upon with suspicion. This sounds like hard doctrine; but when we consider how many young careers that begin with conspicuous undertakings fail to fulfil their promise; when we hear of a notable building by some clever man without experience which fails in a dozen practical requirements, or costs twice as much as was intended, or of one which, built by some promising ignoramus, tumbles down before it is done, we cannot help wishing that delays rather than helps should be put in the way of callow architects, so that they might be forced to earn their experience in ways less costly to their clients, less derogatory to their profession.

## THE NEW ARCHITECTURE AT ALBANY.

TO THE EDITOR OF THE AMERICAN ARCHITECT:

*Sir*, — The provisional occupation of the Court of Appeals Room at the Capitol at Albany, by the State Senate, and the permanent occupation by the Assembly of their magnificent Chamber, on Wednesday, the 8th instant, were preceded on Tuesday evening by a grand reception, at which the new architecture of the great building was for the first time displayed to the public. As the evening was distinctly architectural, rather than social or political, it seems eminently proper to accept the challenge suggested by the occasion, and seriously to discuss this latest, most imposing, and perhaps most significant manifestation of the national progress in art. As a contribution to this discussion, the writer, who was fortunate enough to be present at these opening scenes, ventures to accept your invitation, Mr. Editor, and to give the result of his impressions, with the frankness which befits a theme so interesting and important.

The history of this undertaking is too well known to be again rehearsed, and much of it would not be germane to a purely architectural discussion. It is sufficient to say that two architects of high reputation have, in this building, undertaken the very serious task of completing and correcting a work begun by another professional brother, and carried on by him, at vast expense, to a point which must necessarily commit all subsequent work to the realization in great

part of an architectural scheme defective in certain fundamental points. A *résumé* of the report of Messrs. Eidlitz, Richardson, and Olmstead, with respect to the original design, when they were acting as a professional Advisory Board to the Capitol Commission, was published in this journal March 11, 1876, together with reproductions of the first studies of their proposed alterations. The violent contrasts between the original and this modified design, the sudden and phenomenal transition in the latter from the well-defined Renaissance of the two lower orders to the equally well-defined new Romanesque in the upper orders, and the fundamental change in the character of the skylines, elicited, it will be remembered, a very formal expression of dissatisfaction from one or more chapters of the Institute, followed by a resolution of the legislature, requiring that the building should be completed in the style in which it had been begun. After Messrs. Eidlitz and Richardson, the professional members of the Advisory Board, had been constituted the architects of the building, and they had assumed the actual responsibilities of construction, their more deliberate studies and their more serious reflections were, it may be supposed, sufficient in themselves, without any extraneous impulses, to cause an essential modification of the most objectionable parts of their original scheme of alteration which was evidently merely a preparatory study. The fruits of this sober second thought are very evident in that portion of the exterior which is advanced towards completion, namely, the new north front, which, it may be remembered, according to the original conception, that has not been fundamentally changed in the plan, is composed of two square flanking pavilions, the curtain wall between them being broken by two comparatively slender towers enclosing the main central division of the façade. This curtain wall has been, throughout this front, reduced from the original in height by one story, and the central division between the two towers is now crowned by a vast steep roof, of severe and effective outline, covering the new Assembly Chamber, and broken by well-designed, tall chimney-shafts, the whole recalling the French civic architecture of the fifteenth century, of which the Château of Blois may be considered the type. These curtain walls are crowned with balustrades and tall gabled dormers, also conceived with the feeling of early French Renaissance, and certainly well composed. The Romanesque arcade of windows, which in the published design audaciously surmounted the Corinthian order of pilasters below, and arrogantly disregarded its centre lines, is now adjusted to the order upon which it rests in this latter respect, is increased in height, and its Romanesque quality seems to have been modified by certain late Roman characteristics, such perhaps as might have been seen rather in the palace of Diocletian at Spalatro than in that of Frederick Barbarossa at Gelnhausen.

The corresponding window in each of the two towers which flank this arcade is still, however, distinctly Romanesque, its jamb shafts being Lombardic or Norman, and the audacious spirit which controlled the first condemned study of alteration has left its trace upon the cornice of the Corinthian order below, which has been very frankly changed in outline to the profile of a vigorous Gothic string-course. If in the portico, which is to project from the lower order of this curtain wall, the architects can manage to carry out a corresponding freedom of design without too boldly challenging the order with which it will be continuous, it will be possible to leaven the mass, and obtain a certain degree of unity in the result. Even as it is, the whole composition up to this point is certainly more interesting by far than if developed in a coldly classic spirit, with no inspiration higher than mechanical correctness. Although such amalgamations as this must needs offend from the technical and academical point of view, they have in them certain elements which must commend themselves to him who has at heart the rehabilitation of architecture, to the end that it may express rather the boldness than the timidity of knowledge. In the presence of this especial experiment the spectator who knows and venerates his orders will be pleased at the general result so long as he allows himself to be led by his first emotions, but when he has time to bring his learning to bear on the subject, and spies out the anachronisms of detail, he will be apt to recoil in astonishment from his first impulse of approval, and say, "Is this indeed the architecture which is promised, or are we to look for another?" Evidently the combination so far is not the result of mere vulgar audacity nor of ignorance, for there is a unity of spirit about it, if not of letter, which could not have been fortuitous. The new ornamentation is bestowed with a spirit of elegant reserve. Above the cornice of the second order appears the decorated belt, which was a feature of the original study of the present architects; the two Romanesque windows in the towers are made especial points of enrichment.

The pediments of the dormers are also embellished with sculpture, and under the cornice of the high central division is a rich shell frieze, the effeminate delicacy of which is judiciously corrected where the same feature occurs on the unfinished north façade. This statement comprises, so far as I remember, substantially all the decoration.

Of course, Mr. Richardson, to whom the work on the exterior has been assigned, will know how to make use of the picturesque skylines of the French châteaux on the corner pavilions of this north front, as he has done on its central division over the Assembly Chamber; and with his peaked roofs, high dormers, and lofty chimneys, he will be enabled to create a very effective façade, especially when viewed in the somewhat violent perspective compelled by the comparatively narrow street on which it stands. The same remark is true of the south façade. But Chambord itself will scarcely give us a prevision of the effect of the main east façade when the towering dome is united to the other aspiring features of the composition. Mr. Richardson has not signified in what manner this difficult feat of design is to be accomplished. Certainly, the heavy German Romanesque of the dome in the original study of the Advisory Board, before it can in any respect be affiliated with this new work, must undergo a fundamental change.

The only portions of the interior which are at all complete are the Hall for the Court of Appeals in the first story above the high basement, the great Assembly Chamber occupying the two stories above, one grand staircase giving access to these, a great entrance hall, and various surrounding corridors and offices; all these occupying the main part of the south wing, and comprising apparently less than one quarter of the whole building. For this part of the work Mr. Eidlitz is responsible, and to it he has brought the resources of a trained intellect, great experience and boldness in design and construction, and an inventive power which has already been exhibited in many important works. These qualities have served him well, especially in the lower parts of the building, where the work had been already so far advanced when it fell into his hands that his task was confined to the adjustment and extenuation of existing features. But in the newer parts, where he was less embarrassed, he has given us an example of honest and elegant workmanship, of careful design and profuse invention, which cannot fail to exercise a great influence upon contemporary art in this country, but which, in its present application, exhibits also such a contemptuous disregard for the style to which he was called upon to adapt his ideas that one hardly knows whether to admire him for the boldness of his convictions, or to be amazed at his want of sympathy for what we have been accustomed to regard as the obvious proprieties of design.

His interior is unrelenting Gothic, without any touch of affiliation with the mask of orders which encloses it. It is possible to imagine a mediævalism so adapted even to classic conditions that the line of demarcation would be hard to find, — a reconciled mediævalism and classicism which would impress the beholder with the idea that the learned and accomplished architect of the nineteenth century knows how to use his great inheritance of architectural forms so as to create a harmony even among the most discordant elements of design. But no such harmony is here attempted, and Mr. Eidlitz has allowed himself frankly and openly to make an absolute and sudden change in the fundamental idea of the composition. According to this new dispensation, the lion and the lamb lie not down together. The function of the modern architect among his books is indeed liberty, but it is not license; he should be in the largest sense cosmopolitan, not partisan, in his use of knowledge; this perpetuation of the battle of the styles in a monumental building, which should be a standard of progress, is therefore an ill-timed offence to the spirit of architecture, and implies a presumption of popular ignorance or indifference upon the subject which should not be allowed to pass without notice.

If an architect of the thirteenth century had built a vaulted hall in his own fashion, within the shell of the Roman amphitheatre at Pola, we can imagine that he would have done the very same sort of thing that we see at Albany. But an architect of the nineteenth century in America should be held to a very different account in a similar emergency, for obvious reasons.

Forgetting, however, for the moment this confusion of tongues, we may study Mr. Eidlitz's Gothic with pleasure and profit. It is, as we have said, solid and monumental work which he has given us, thoroughly studied, and, within the arbitrary limitations of the style which he has chosen to set for himself, there is no better or bolder modern composition to be found anywhere, none with more refinement and elaboration of execution, and none with more ingenious and beautiful detail. The great staircase is in two flights, and is a grammatical example of modern Gothic in the English sense. It is built in light and dark sandstones around a square well, which is enclosed in an open screen of columns and pointed arches carried up to the highest runs of the stairs, and there stopped. These arches on the ranges are stilted on the lower side in each case, the higher impost being marked on the lower side by the capital of a jamb shaft, which starts from the abacus of the next capital below. The rail is supported by a die elegantly pierced with open Gothic panels repeated in blank on the dado against the wall. The screen, however, considering its functions, seems quite too heavy, and its details are coarse enough for exterior work. It is to be regretted that a constructor so skilful should not have availed himself of the opportunity for a lighter and bolder treatment, and given us perhaps a single ramping or flying arch for each run. The vaulted corridor by which the main entrance to the Court of Appeals is reached is lighted by a glazed arcade, opening on the court, and affords us our first salutation of color, — an ingenious symphony (shall we say) in red patterns upon a gold ground, the naturally varying nature of the gold in different aspects admirably illustrating the different inclinations of the vaulted surfaces, which are further separated at the angles of the vault by small gilded heads, a temperate but very effective enrichment. It is to be noted, as a fair example of the intellectual as opposed to the sensuous spirit, which has made its way into the best modern design, that the functions of each member of this simple architectural ordinance are recognized by some difference of treatment. Thus, as regards the walls, the eye is balked of its natu-

the
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~ Messrs.
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* Architects *
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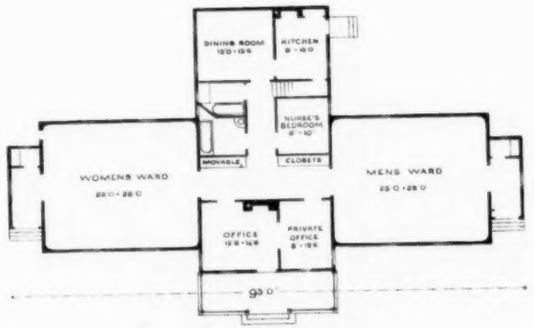

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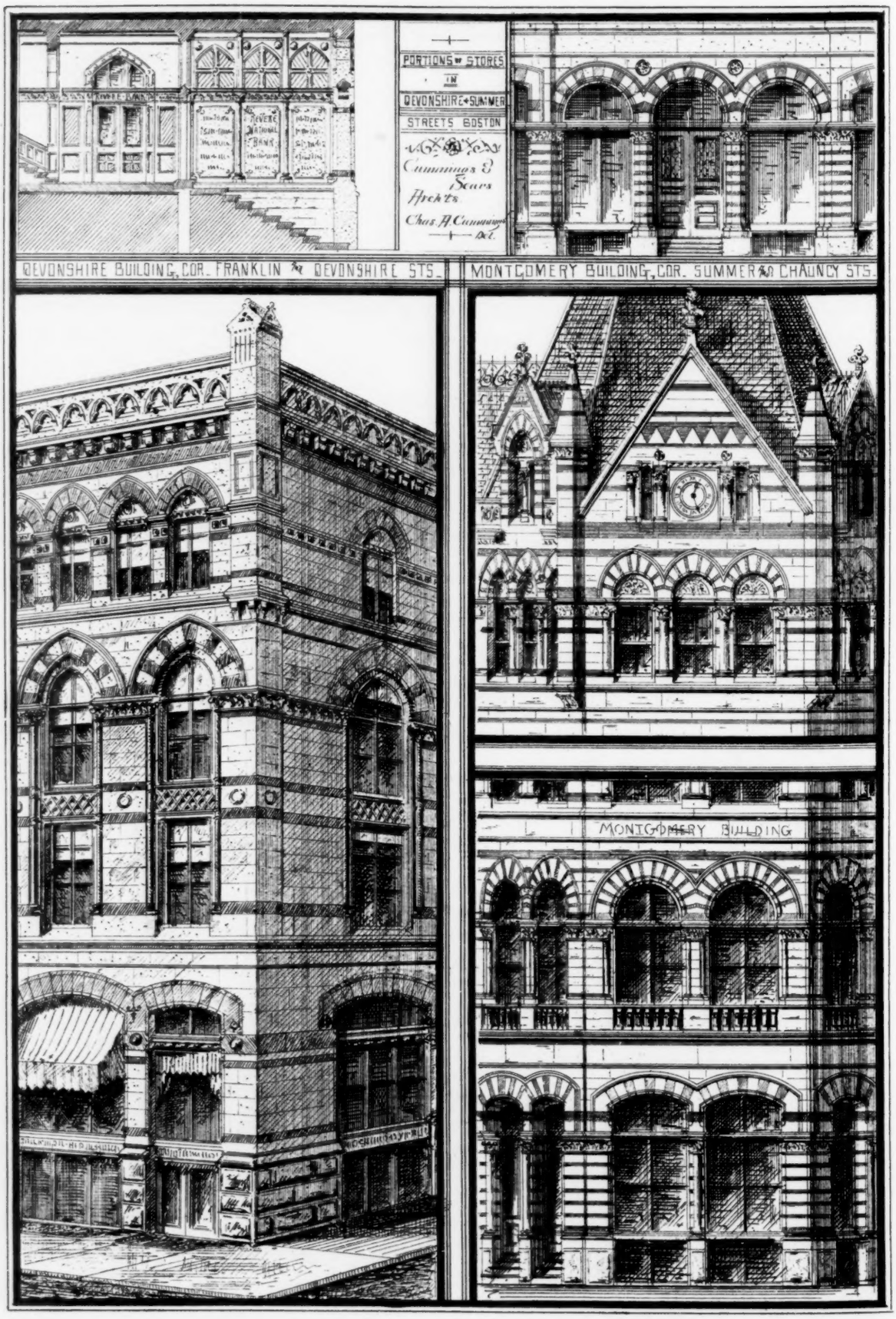


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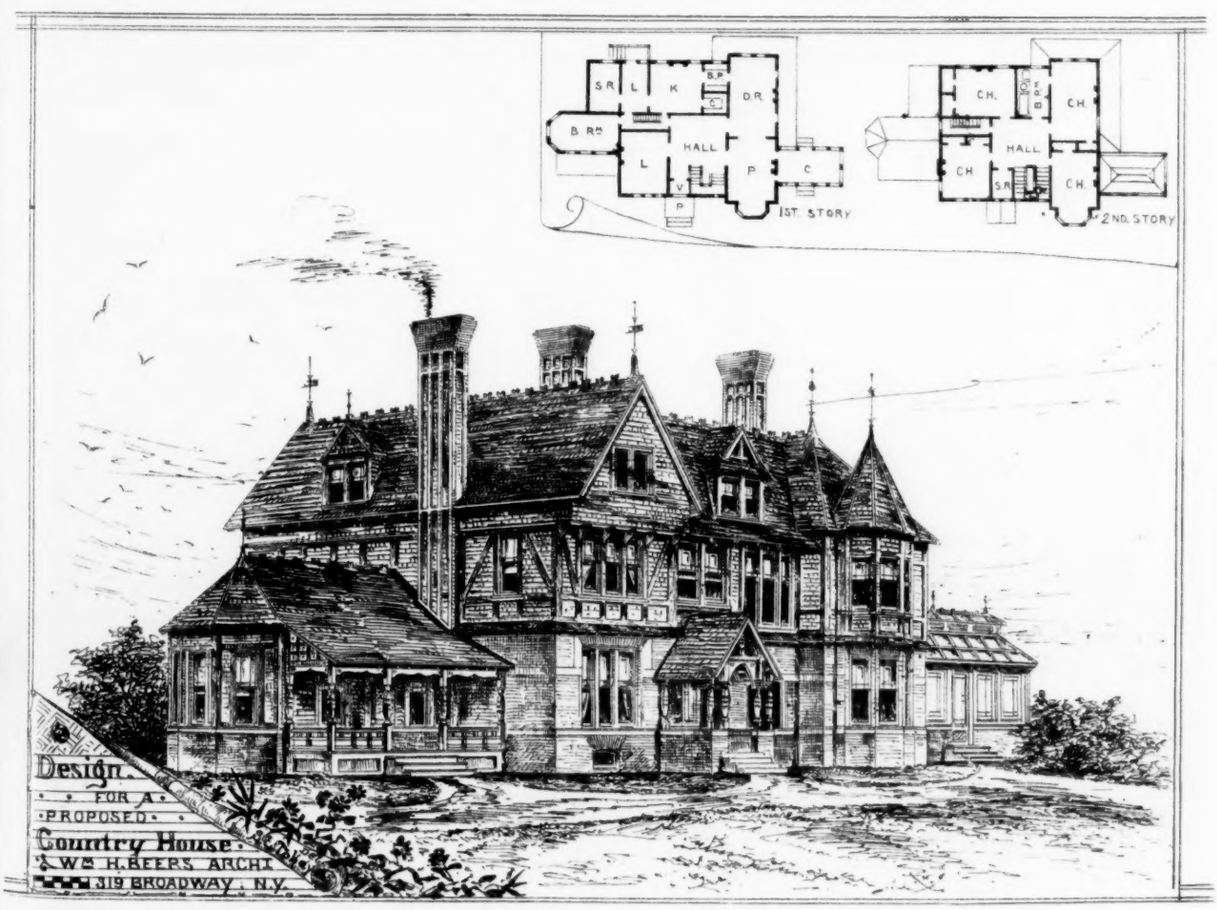


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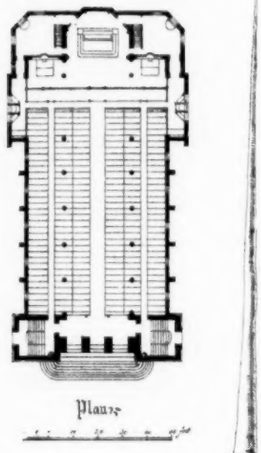

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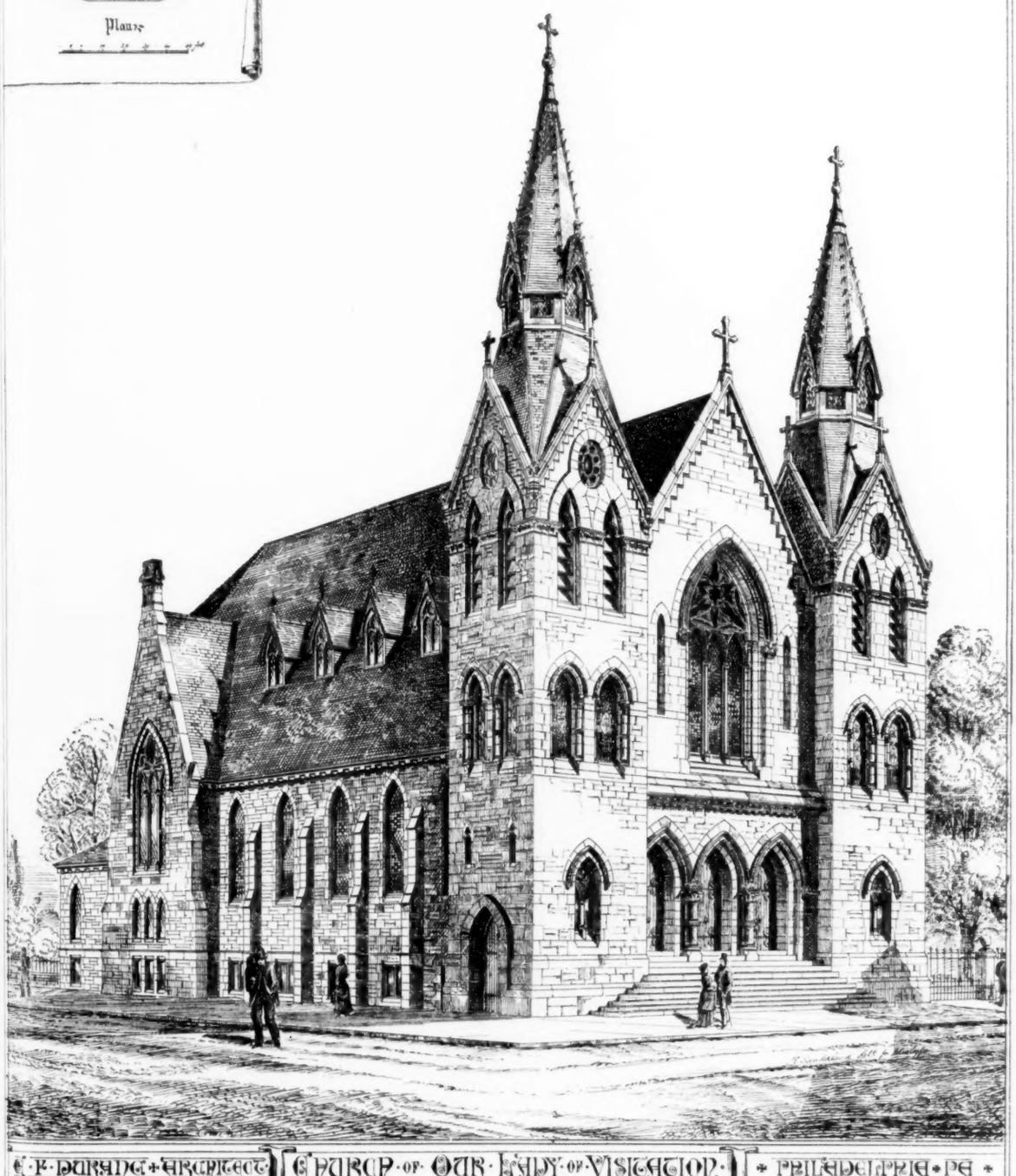

C. F. Durang, Architect. | Church of Our Lady of Visitation. | Philadelphia, Pa.

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ral, or perhaps inherited, desire to see certain of the belts of decoration upon the piers continued along the wall surfaces between, so as to bind the whole together. All such lines stop without ceremony at the internal angles, where also the belts of the wall surface experience a sensation of discontinuance; but if the senses are cheated of their birthright in this manner, the intellect, which recognizes that the pier has a different service from the wall-veil, is expected to be moved by an emotion of gentle approval.

The Court of Appeals is a parallellogram in plan, divided by a screen of stone arches, with a flat ceiling arranged in coffers of oak elaborately carved; the room is wainscotted some ten or twelve feet high in the same manner, with richly carved oak, having a wall treatment of red above. The light sandstone of construction appears in the window jambs and doorways, and the wainscotting is set flush with it. The color of the oak, with the red walls, makes a beautiful harmony of subdued richness. The carving is very abundant, very beautiful, and very real, and the draperies are large, rich, and ornamental in character. The carpet is crimson. The Gothic element, as a contrast to the classic, offends less here than elsewhere, but one inclined to criticise might object to the elaborate affectation of honesty in the truss-work by which the oak-encased iron girders are to the eye supported at their bearings. In the neighboring office of the Attorney General the corresponding iron girder, which by the bye is in every case a part of the original construction, is frankly gilded, with all its bolts and rough angle irons, and the floor arches which it supports are confessed in the decoration, which is simple and effective, although the portion of the wall surface above the impost line is too nearly equal in width to that between the impost and the dado, and too heavy in color. Perhaps the intellectual sensitiveness of the modern architect would have been better content if, in the case of the oak ceiling of the Court of Appeals, which in reality forms an impervious screen under the floor arches, it had been designed in open-work, to show that it was a screen, and not a piece of construction. The grosser professional sense, however, which loves it knows not why, may well be content with the show as it is.

The testimony of the countless throngs of ladies and gentlemen, on the night of reception, wandering through the solemn Gothic corridors, so monumental both to the eye and to the understanding, and entering these apartments so rich but so serious and comfortable, for all their color, was a testimony of undoubting delight and surprise. And well it might be, for so rare a feast has never been set before them on this side of the water. The greater, therefore, the offence of the wise but cunning Aladdin who rubbed his wonderful lamp with such bewildering effect. If it had indeed been a lamp of truth, these pointed arches, would they not have been changed to round, and these beautiful details, would they not have yielded somewhat of their mediævalism for the sake of the harmony which should prevail in a great monument of architecture?

I propose in another letter to treat of the Assembly Chamber, which of course was the main object of interest. H. V. B.

## THE ILLUSTRATIONS.

THE MUHLENBURG HOSPITAL, PLAINFIELD, N. J. MESSRS. H. EDWARDS FICKEN AND CHARLES H. SMITH, ARCHITECTS, NEW YORK.

THIS building, about to be erected as a cottage hospital for the Muhlenburg Society of Plainfield, N. J., will be, considering even the present low rates of labor and material, one of the most economical of its kind, finished as simply, yet thoroughly, as is compatible with its requirements and possible for the small amount expended upon it. There will be a cellar under the rear part of the main building, flooring of yellow pine in the wards and halls of the ground-floor, and double to both stories. Walls and ceilings of first and second stories will be plastered two coats, and all interior and exterior wood-work will receive two coats of paint. Bath-tubs, water-closets, range, boiler, pump, etc., are all included in the contracts, which have been awarded to responsible Plainfield builders for the total sum of $3300. The two chimneys shown on the wards will be of terra-cotta, hung from the roof. The ventilation of the building has received the most careful attention, especially in the wards.

PORTIONS OF THE DEVONSHIRE BUILDING AND OF THE MONTGOMERY BUILDING, BOSTON, MASS. MESSRS. CUMMINGS AND SEARS, ARCHITECTS, BOSTON.

Both of the buildings here shown are built of white marble relieved with belts, *voussoirs*, etc, of a bluish limestone. The drawing belongs to the series prepared by the Portfolio Club, others of which we have published from time to time.

DESIGN FOR A PROPOSED COUNTRY HOUSE. MR. WM H. BEERS, ARCHITECT, NEW YORK.

This house was designed to occupy a corner lot of 200 feet frontage, with a fine water view in the rear. The house is about 75 feet front. The first story was to be of brick with blue-stone finish, above the first story of timber, with roof and sides shingled. The first and second stories were to be finished principally in ash, and hall, dining-room, library, and billiard-room were to have ornamental hard-wood floors, the vestibule and conservatory being tiled. This house was to cost about $15,000.

CHURCH OF OUR LADY OF VISITATION, PHILADELPHIA, PENN. MR. E. H. DURANG, ARCHITECT, PHILADELPHIA.

This church is now building.

DESIGN FOR A COUNTRY HOUSE, PREPARED BY MR. MORRIS W. SMITH, NEW YORK.

## A RETROSPECTIVE GLANCE AT SOME OF THE ARCHITECTURE OF THE FRENCH EXPOSITION.

III.

AFTER site and plan come execution, — architectural designs other than plans, and the way that those designs are carried out. The architectural design shown in the temporary buildings has been touched upon. The absence of the need of general effect or special architectural effect in them has been alluded to. Their fitness for their purpose is their greatest beauty. But when we come to the permanent building, that which is to do beauty service for the others, the monument, the record, the building built rather for beauty than usefulness, then certainly the highest degree of beauty is the highest degree of fitness. Here we have a right to look for beauty, and must certainly feel proportionate disappointment if we do not find it. The disappointment, wherever there is disappointment, must be exactly in proportion to the expectation. And the disappointment will be in proportion, not to a reasonable expectation, but to the expectations, however unreasonable, which may be engendered by the place, the people, the thousand and one elements that go to make up expectation definite and vague, reasonable and unreasonable.

It is pleasant to begin by praising. The workmanship — the way in which the design for the building has been mechanically carried out — is perfect. It is the perfection of neatness, — of close joints, of smooth surfaces, of good workmanship, of mechanical execution. Everything that they have been told to do, skilful workmen have done, and done admirably. I do not know that it is reasonable to expect very much more. In a few months, or even a year or two, there is scarcely time to tell all the workmen employed on so large a building a great many interesting things. Taking into account the shortness of time, the vastness of the works, and the architectural habit of our time, I suppose it would be only reasonable to expect in a building erected under these conditions no more than a dry, bald, drawing-board-architecture sort of look. If so, such reasonable expectation seems to me fully met and satisfied by the building in question. But if, in addition to such reasonable expectation, it is also reasonable to expect, if not interesting or beautiful or still less original design, yet a certain general grace, a certain beauty of effect, if not of detail, then I think such expectation is not very satisfactorily met by this building. Whether you take it from the Paris side or from the side of the Trocadéro, I am afraid we must say that it is very ugly.

It is made chiefly of bricks. [Bricks are not a very monumental-seeming material; yet that apse of the transept of that old Romanesque church at Cologne is built entirely of bricks, and of very rough, dirty-looking bricks, and what a satisfying pile that is!] It is a building of the new school. Old forms are not forgotten, but they have become servants, not masters. They are made use of or their services are rejected at will. Only, when old servants are rejected, new servants must be provided to do their work. It is not such an easy matter to create new servants in a moment. All the beautiful details of Greek art, or of the art of any other period, were not born in a day, or of one mind. It is only necessary to attempt to design something to do the same work, to find out that they are results of the survival of the fittest. And if training servants to do necessary work is hard and takes time, that is as nothing to the time necessary to train servants to do work decoratively.

The west front, the façade on the Trocadéro, of the permanent building of the Paris Exhibition, looks like the façade of a Continental railroad station. It is a broad gable of a medium pitch, like the front of the Milan Cathedral, — an ugly outline on paper, redeemed in the Milan case by the crowd of details encrusting and hiding it, and the nearness of the only available points of view, which prevent your ever taking in the whole outlines at once, or ever really seeing the façade as it looks on paper, and is. Some flat panels, — they look about four inches deep, though doubtless deeper, — with round-arched heads, arranged like a group of lancet windows in an early English gable, the tallest in the middle and the shortest outside, attempt to diversify and architecturalize this front. They look like efforts to meet some conventional idea of what had better be done, — a poor policy. In this case the policy is not only poor, but is carried out in a poor way. The early English architects made the tallest opening or panel or lancet the widest, and the shortest the narrowest, and diminished those between in proportion to their height. Again, the line of the tops of their lancets and that of the gable are never parallel. In short, they possessed an architectural instinct. The French, and our modern habit, but too generally have substituted the drawing-board and like tools for architectural thinking or architectural instinct. The modern method is the quickest, but its results show the fact. They look as if no time or thought or, least of all, emotion had been expended upon them. And, without such expenditure, I do not see how we can expect them to excite interest or thought or emotion, that noblest and subtlest result of architecture, which alone is what raises it to rank with poetry and music, which alone makes it a fine art. And that is just the lack of

the Trocadéro façade of the building in question. And what is true of that façade is unfortunately rather true of all the exterior. There are two towers, something like the common Italian campaniles, one on each side of the main body of the building. They stand up something like the two smoke-stacks of a steamboat; and the big bulk of the building between them, with its rounding end toward the garden, is something like the round stern of a steamboat; even the gallery carried around it is something like the projecting guards of a lower deck. Such resemblances do not detract from the real merit of a work of art, in any but the lightest sort of minds, though they serve sometimes to help to convey an idea of a design. The one just named is mentioned with a further purpose. I have often admired the stern view of the just-passed steamboat and the fine balance and vigor of line of its two smoke-stacks; but I know that they, and all its parts, have their uses. They are made as they are for apparent, or, more interesting still, hidden reasons of need. I can find no reason of need for the two towers of the Paris Exhibition building. It is drawing-board architecture again. These and other *motifs* in the architecture of this building seem adoptions with no particular reason. They seem the expedients of a commonplace mind; not the action of a mind with courage enough to do no more than need be done, not the action of a mind too full with a faith or an artistic impulse to have room in it for anything but the utterance of the pressing necessities of the case.

It is a credit to much of the exhibition building, and specially to its workmanship, that the nearer you get to it the better you like it. But it is no credit to the building to be ugly from a distance. The perfect building is of course one that is beautiful and satisfies from a distance, and that is beautiful and satisfies on a nearer inspection. We suppose the Parthenon at Athens to have been such a building. And the most beautiful would be one that would be like some mountains, or some beautiful trees which have not only fine form but an exquisite foliage, of which we cannot tell whether we admire them most from near or from far points of view. However admirable a single feature in itself may be, it is still a great fault if it largely detracts from the good general effect of a whole building as an ensemble. The building in question does not abound in interesting details. The color which a piece of wall is painted is, however, a matter of detail. The portion of the exterior wall around which the colonnade or outside gallery is carried is painted a Pompeian red. This looks well from near by, and the white columns of the gallery look prettily relieved against it. But, of course, in the shadow thrown by the colonnade roof, this color looks almost black at a distance; that is, it looks like unlighted space, or as the voids in a building look. The result is that from a distance the mass of the building seems to stand upon nothing, or, worse yet, to rest on the columns of the encircling gallery, which thus appear tiny and belittling. This is, however, an error in judgment, it is not a lack of design, it is not drawing-board architecture; it is only good design out of place. But, again, a matter of detail may be in place, it may be thoughtfully employed, it may be even necessary from a constructive point of view, and at the same time it may be very difficult to treat it satisfactorily. That palliates, excuses, even, the short-coming of the architect if he fails to treat it so that it does not injure the appearance of the building; but not the less does his failure result in a fault in the building, however unavoidable. Thus, attached to the main wall of the building, and placed at intervals around the apse-like end, are a number of projections which are carried up to the top of the building and finished out in a rather imbecile way. They look about a yard square each, or less, but I suppose they are as big as small towers. But, though a certain amount of thinking and architectural experience may lead one to conclude that they are useful and why, yet they do not look so. To most people, I think, they must look neither useful nor ornamental, but intended to be the latter. Their great look is the unmeaning and commonplace look. But Gothic buttresses do not look unmeaning, even to those who do not fully understand or think or care about their use. They do not look unmeaning, however plain, nor yet however elaborate they may be. Neither do the counterforts of a retaining wall of a bank of earth look unmeaning or commonplace. They look in place, and needed in that place. Not conventionally in place, but necessarily in place. Not an unmeaning commonplace, but a meaningful though common need is called to your mind.

## AN ATTEMPTED RESTORATION OF A HYPÆTHRAL TEMPLE.

[We translate from the *Encyclopédie d'Architecture* the following memoir read by M. Charles Chipiez, Académie des Inscriptions et Belles-Lettres, December 28, 1877.]

II.

It is now time to consider whether monuments and texts justify the employment of the methods which we have used to complete the temple.

Observations made at Ægina by M. Garnier upon this same building make the existence of two openings in the roof very probable. These were observations of the upper and lower columns of the colonnades of the cella. The former are in monochrome, while the clear and even tone of the latter is violently relieved by lines of strong red which mark the arrises of the flutes. Recurring to our perspective view, it will be seen that it was absolutely necessary that it should be so. The columns, lighted by a cross-light, would offer to the spectator placed in the axis of the temple but a vague and feeble outline, if strongly pronounced lines did not reëstablish the firmness of the contours. This subtle artifice, wholly characteristic of Greek refinement, is wholly explained by a bi-lateral lighting.

The construction of the inner colonnades seems otherwise to confirm the perforation of the roof. It appears from the ingenious observations of M. Choisy, that the Greeks placed their stone according to the nature of the force to which it was to be submitted; the courses, as they were to resist compression or flexure, were placed upon their quarry bed, or at right angles to it; in other words, the layers of the stone were, in the first case horizontal, in the second vertical. The application of these principles of construction is manifest in the great temple of Pæstum. The architrave of the lower order in the cella of this building is placed upon its quarry bed, for intelligible reasons; otherwise there might be fear of its being crushed between the capitals of the lower columns and the shafts of the columns above; while there was no danger of its giving way between the supports, either from its own weight, or from that of the thin flags of the intermediate floor. The architrave of the upper order, on the contrary, is placed at right angles to its quarry bed, that is, with the stratification vertical, thus showing that it had to resist flexure, a considerable weight to support between the columns. With what heavy mass, other than the roofing of the cella, was it possible to load it? Upon this architrave are overlapping slabs ornamented with a beak-moulding, which is repeated upon the walls, and encloses the space that we have assigned to the openings in the roof. This is a detail the more remarkable in that the lower architrave is profiled upon those of its faces only which look upon the interior of the cella.[1] Such arrangements make a break in the roof over the side aisles of the cella not only possible, but probable.

In all the restorations of hypæthral temples which have hitherto been submitted, the water from the roof falls partly outside, partly into the cella, to the floor of which it is led by earthenware pipes. Without concerning ourselves about the offensiveness of rain-water conductors to students of Greek monuments, it may be remarked that the most minute investigations have not discovered, among the enormous quantities of ceramic fragments that have been brought to light, any that could lend itself to this service. Moreover, the floor of the cella never bears traces of arrangements made for the disposal of rain-water. These circumstances seem singularly to support the method with which at the outset we have directly carried the rain-water outside the temple. We could multiply remarks of this kind if our attention were not called to a rapid analysis of the texts.

It would be inappropriate to discuss features peculiar to the Roman temples. A fundamental distinction has justly been established between the hypæthrum of these buildings, destitute of inside colonnades,[2] and that of the Dorian temples. Varro, Ovid, Lactantius, Festus, and Servius may then be passed by.

Of all ancient authors, Vitruvius alone has described the arrangements of the Greek hypæthrum: "Hypæthros vero decastylos est in pronao et postico; reliqua omnia eadem habet quæ dipteros, sed interiore parte columnas in altitudine duplices, remotas a parietibus, ad circuitionem, ut porticus peristyliorum. Medium autem sub divo est sine tecto, aditusque valvarum ex utraque parte in pronao et postico. Hujus autem exemplar Romæ non est, sed Athenis octastylos, in templo Jovis Olympii."

M. Beulé thus translates this paragraph: "The hypæthral temple has ten columns, both in pronaos and in posticum. It is like the great temples whose outer colonnades are double, excepting that in the interior of the cella it has two rows of superimposed columns, separated from the walls, and, like the colonnades of the peristyle, leaving passages for circulation. The space lying between the two interior colonnades is open, and without roof; there are doors on each side, both in pronaos and in posticum. In Rome, we have no hypæthral temple; but there are several in Athens, with eight columns in the façades; for example, the temple of Jupiter Olympius" (or, with the conjunction *et*, "also the temple of Jupiter Olympius"). "So important a passage," M. Beulé then remarks, "was unhappily found to be inaccurate, and the various readings contradict each other. What do these ten columns in posticum and pronaos signify? Why are the only examples cited by Vitruvius exceptions to the rules laid down by him? Are these doors on each side of the usual doors in front of the cella, or side doors like those at the temple of Jupiter Olympius at Selinus, intended solely for the use of the multitude? What are these temples with eight columns mentioned by Vitruvius? The Parthenon? But there is here an opisthodomus which assuredly did not serve as a passage for the multitude, since it contained the public treasure. The temple of Jupiter Olympius? But this has more than eight columns on the façade. The temple at Olympia? But this has only six. The uncertainties are numberless, and lead to nothing. We must then wait for a better understanding of the text."

The ambiguous description of the Roman author is a sufficient indication that he had not seen the hypæthral temples of Greece; he might be said to have taken it from scattered data, selected from writers. From this point of view, it offers a peculiar interest. Assuming that Vitruvius has united in a theoretical example arrangements borrowed from different temples, we are able to explain most of his deductions.

[1] A. Choisy, *L'Art de bâtir chez les Romains*, pl. xxiv.

[2] The cella of the temple of Jupiter at Pompeii is an exception to this rule.

If we set aside the question of decastyle or octastyle porticos, which by our theory is stripped of all importance, we immediately confront two easily intelligible directions.

The light must enter by the open roof, *sub dio*, which agrees with the assertions of various writers. *Ὑπαίθριον, ὑπό τ' ἀέρα*, says Hesychius in a short comment. The cella, too, must be divided by columns; this arrangement is in no wise imaginary; all archæologists know that the interior of several Doric temples was divided into three aisles by means of superimposed colonnades. Finally, doors are necessary in the walls of the pronaos and posticum; here, the monuments contradict the text; the grand entrance of the temple is not ordinarily repeated upon the wall separating the cella from the opisthodomus.

Are lateral doors referred to? Let us examine this hypothesis. In attributing to the ideal type of the hypæthral temple a decastyle arrangement, Vitruvius, from this very fact, has in mind a larger building than the Parthenon. It is much less extraordinary to suppose secondary entrances to an interior of such exceptional importance, from the fact of a similar peculiarity being often reproduced in Greek architecture. The propylæa, for example, which are in some sort the vestibules of temples and which repeat the lines of their façades, are more or less pierced on each side of the principal door,[1] which is elsewhere plausibly explained by the necessities of circulation. We do not know the reason of a similar arrangement in certain sacred buildings.

According to Pausanias, openings placed in the axis of the porticos were sometimes contrived in the wall at the farther end of the cella. This same author makes known that the temple of Jupiter at Olympia had several entrances: "Over the doors of the cella," says he, "is to be seen the boar hunt of Erymanthus;" and farther: "Entering the bronze doors, you see on the right a column against which Iphitos leans with his wife Eecchiria." Two doors have been observed in the pronaos of the temple of Jupiter Panhellenius at Aizani, in Asia Minor; and traces of two entrances are still to be seen upon the façade of the great temple at Agrigentum. Finally, what is conclusive, the temple of Jupiter Olympius at Selinus had lateral doors upon the wall of both pronaos and posticum.

If such were the case with the canonical type of the hypæthra, the roof-openings and lateral doors in the cella walls are strictly correlated in the text of Vitruvius, and hence the signification of the *medium sub dio est, sine tecto* is very different from what has always been attributed to it. Let us resume M. Beulé's translation, modifying it in consequence. "It has two rows of superimposed columns in the interior of the cella separated from the walls: and, like the colonnades of the peristyle, leaving passages for circulation. *The space lying between the walls and interior columns* [and not: The space lying between the two interior colonnades] is open, and without roof; there are doors at each extremity, both in pronaos and in posticum."

The plurality of doors, examples of which might be multiplied, singularly lessens, it will be seen, the main difficulty of this paragraph; to our mind, it can also be inferred from it that the canonical arrangements of the hypæthra admitted of two openings in the roofs of those temples whose cella was separated by columns, and that these openings occupied the space between these columns and the walls of the cella.

A passage from Justinius supports rather than invalidates our system of restoration: —

"When the Gauls," he says, "menaced the temple of Delphi, the Greeks imagined they saw Apollo decend from the sky and pass into his temple — *per culminis aperta fastigia* — through the openings of the roof."

Other texts, often cited, and whose importance we have no wish to exaggerate, also bear upon our subject.

According to Pausanias, the lightning struck the pavement of the temple of Olympia when Phidias entreated Jupiter to indicate his approval of his statue. This is indirect evidence that the roof of the temple was open. Strabo makes the following remark upon the Jupiter of Phidias: "The god, although represented seated, almost touched the ceiling with his head, and one could not help thinking on seeing him, that, if he were stretched out to his full height, he would have lifted the roof from the building." From the passage of Pausanias, we were obliged to conclude just now that the temple of Olympia was open. Strabo shows us that this building was also covered in its central part. I well know that we might suppose a Jupiter Olympius to be placed in some kind of niche; but this arrangement would leave a trace upon the plan of the temple. The latest investigations of which the temple at Olympia has been the object have discovered nothing which justifies such an arrangement as this.

There is such agreement between these texts and our restoration that we think it useless to adduce certain arguments that a small number of inscriptions might suggest.

If our demonstration is clear, it should be proved that the Doric temple with interior columns was covered and lighted. The methods we have suggested for giving access to the light, and which it behooved each builder to proportionally modify, result from the very plan of the temple; the structure of the building itself proclaims them; these methods are simple, and, in our opinion, in accordance with the spirit of Greek architecture.

[1] This is the case with the propylæa at Athens and Eleusis.

## THE SEWERAGE OF NEWPORT.

TO THE EDITOR OF THE AMERICAN ARCHITECT:

*Dear Sir*, — Your inquiry as to the probability of a proper system of sewerage being carried out in Newport would have been answered long ago had it not been desirable to await the final action of the city council upon projects then under consideration.

The subject has been discussed for several years, and the recent introduction of a public water-supply has of course emphasized its importance. Some months ago the committee having the matter in charge let it be understood, in a non-committal way, that they would be glad to receive suggestions concerning a plan: subsequently they invited Professors Wm. B. Rogers, Fairman Rogers, Josiah P. Cooke, Wolcott Gibbs, and Alexander Agassiz, and General G. W. Cullum to act as an advisory commission and suggest the general features of a plan.

These gentlemen gave the subject their careful consideration and recommended that the sewage be discharged at the west side of Coaster's Harbor Island, or beyond the breakwater of Goat Island. Mr. Philbrick and I selected different points of outlet on Coaster's Harbor Island. Dr. Storer suggested an outlet at Castle Hill. The four reports contained, it is fair to say, material upon which an intelligent committee, aided as they would have been by the gentlemen above named, might have organized a system which it would have been worth while at least to consider, and which, if of no other value, would have served as a starting point for profitable discussion. The cost of this would not have exceeded $500, and it would have secured a most important step in advance.

The action finally taken was to present to each person who had reported on the subject a printed copy of a resolution of thanks passed by the council, attested by the gold seal of the city. *Et voilà tout!*

It is absurd to suppose that a community ruled as this is will tax itself for the building of sewers until after it shall have lost, for the want of good sewers, — and of the reputation which these would give the town, — lost, that is, by disease and death, and still more by the rumor of them, several times the estimated cost of the work.

Like all other towns we are governed by the majority; perhaps more than the average of towns, by a majority which is careful in the matter of taxes, and more doubtful as to the propriety of new methods. In many ways this is advantageous, but on any question of sanitary improvement it is fatally bad. We have already spent more for bad sewers than the complete proper drainage of the whole city would cost. We shall probably again waste in patchwork — of little ultimate value — more than a complete system would cost.

Our sanitary condition certainly is not now above reproach. Our public water-supply is largely derived from a gathering ground manured with night-soil, which, in at least one instance, has been copiously spread to within ten feet of the main stream and near the supply-pond only a few days before a heavy rain-fall. The majority of the people depend on wells which are in close proximity to cesspools and which analysis has frequently shown to be tainted with sewage matters. Such sewers as we have discharge mainly into the still water of the inner harbor. Our household wastes are carted through the streets in broad daylight, in stinking carts, and in many respects the usual characteristics of small fishing-towns prevail. Still, however triumphant our development of stench may become, it is not likely that the condition of the public health will be greatly affected thereby. We have a sea-side atmosphere in almost constant motion, and infection is not here likely to make its assault through the medium of the outer air. Our danger, such as it is, relates to the accumulation of the worst forms of filth in the soil and in its water-bearing strata, and to the foul oozings into our cellars. With an increased use of water, these conditions are rapidly growing more serious. No complete remedy for this trouble has yet been devised except complete, universal, compulsory sewage, accomplished by means of the best appliances of the art. This we shall not have for many years to come

The sewerage discussion has not been without its amusing incidents: for example, a grave and learned-looking editorial in one of our papers, a few days since, compares our conditions — with the whole of Narragansett Bay to receive the sewage of 15,000 people — with that of London, where the offscourings of a population of over 4,000,000 is poured into a little river whose discharge is obstructed by a tide of some thirty feet, — the heavy salt water of the flood burrowing under the fresh-water outflow and carrying upstream the foul matters deposited in its bed.

Our own problem is really an extremely simple one. It will be at most a question of carrying our outlet far enough out into the bay to reach the main sweep of the tidal current. My own notion is that sewage delivered at the upper end of Coaster's Harbor Island, and moving southward only when the water is flowing out from both arms of the inner harbor, will become so diffused in the enormous preponderance of salt water, that the little which will return and be drawn into the harbor with the inflowing current will be inappreciable, — practically nothing as compared with what we are now delivering there.

If your interest in the matter is based on a desire to know whether you can safely recommend Newport as a residence for your friends, you may consider that, on the whole, our advantages exceed our disadvantages, and that an intelligent person may so regulate his life

here as not to suffer from the obvious and increasing sanitary defects of the place.

Geo. E. Waring, Jr.

Newport, R. I., January 6, 1879.

## PUBLICATIONS RECEIVED.

The Ghiberti Gates. An Account of Lorenzo Ghiberti and the Bronze Doors of the Baptistery at Florence. By Mrs. Julia A. Shedd. Boston: Houghton, Osgood & Co.; The Riverside Press, Cambridge. 1879.

## NOTES AND CLIPPINGS.

Houses for Workingmen. — The Chicago *Tribune* mentions a building scheme which the Union Mutual Life Insurance Company propose to carry out upon some of their vacant property in the southern part of Chicago. The plans are the work of Messrs. Wheelock & Clay. The problem of building houses in a continuous block, and yet having, to a great degree, the appearance of isolation, is accomplished by a double court in front between each pair of houses; this feature, besides giving ample light and ventilation to all interior rooms, affords the architects an opportunity of displaying considerable variety in the treatment of their designs, not only of the exterior, but of the interior. The courts in the rear are quite similar to those in front, leaving only a short line of party-wall between the two houses. As the courts are thus in pairs, they give double the amount of light, and yet the windows are so arranged that it is impossible to see from one into any other. Also, by an ingenious arrangement of the staircase in each alternate house, the front entrances are entirely separate and come in regular succession. These houses are to be of two stories, with cellar and attic: in the cellar are the laundry, furnace-room, storerooms, etc. Each house has a parlor, hall, and staircase-hall, dining-room, kitchen, etc., upon the first floor; part of them have a library in addition, all well lighted and ventilated. The main stairs are at the rear of the parlor, and not exposed to view upon entering or leaving the entrance halls, which are to have tile floors, open and unobstructed.

The Lee Monument. — The Lee Monument Association, chartered by the Legislature of Virginia for the purpose of building in Richmond a monument to General Robert E. Lee, proposes to take up on his birthday — the 19th of January — a collection throughout the South in aid of its undertaking.

The King Bridge. — Professor Vose having declared the King Bridge Company's bridge in Bath, Me., to be unsafe, the company challenged him to a test, agreeing to pay for the damage to the structure should it give way, and proposing that otherwise the professor should pay for the expense of the test. Professor Vose accepts the test, and says: "This test must, of course, be conducted by di-interested persons, not by the King Bridge Company nor by me. Let us appoint three iron-bridge experts, one to be chosen by the King Bridge Company, one by me, and these two to select the third; or let the American Society of Engineers appoint all three. Let these men first decide what the contract means when it says the bridge is to hold 2240 pounds per foot. Let them see that the actual amount is put on, and measure the deflection during the loading, and see how far the bridge recovers itself when the load is removed. Let the experts measure the bridge and estimate the strain on the various parts. If the bridge does not fall, the experts are to say whether any part has received permanent injury, or has been strained to more than the safe amount."

Honors to Americans. — *Le Moniteur des Architectes* states that a Mr. Lindsley of New Haven, Conn., has obtained the Prix Mulher-Jœhnée. It is also a matter of common report that Mr. F. D. Millet, a Boston artist, and during the Russo-Turkish war a correspondent of the London *Daily News*, has been decorated by the Czar with the order of St. Stanislaus.

Liverpool Docks. — The landing-stage and all the dock estate on both sides of the river are owned and administered by a body known as the Mersey Dock and Harbor Board, which also controls the pilots, and assesses and receives all dues of the port. It consists of twenty-four members, all of whom are honorary in their capacity; four are nominated by the Conservancy Commissioners of the Mersey, and the other twenty are elected by the dock ratepayers. Despite the variety of the interests involved and the immensity of the trust, no scandalous charge has ever been brought against the administration, which is solely for the benefit of the port and the country. The value of the estate is about one hundred million dollars, and the income is about five million dollars annually. The docks extend for more than six miles in a continuous line, and comprise about four hundred and twenty acres — two hundred and fifty-five acres, with eighteen miles of quay margin, being on the Liverpool side, and one hundred and sixty-five acres, with nine miles of quay margin, on the Birkenhead side of the river. The total quay margin alongside of which ships can be moored is twenty-seven miles, and every quay is built of solid masonry, granite being the commonest material. The dry or "graving" docks, also, are formed of masonry, and a large iron steamer inclosed in one, with her Titanic proportions fully revealed, is a sight to remember. The quays are all covered by substantial sheds or warehouses, those of the new corn dock being ten stories high, with a cellar below the water-level. The corn is conveyed from the vessel by hydraulic machinery into the cellar, which is rat-proof and water-tight, and thence it is raised by an elevator, at the rate of ten tons a minute, to the parts of the building prepared for its storage, the capacity of the warehouses being about one hundred and sixty-five thousand quarters. — *Harper's Magazine.*

Cruikshank's Drawings. — Drawings and sketches by Cruikshank were lately sold in London at moderate prices. A collection comprising 165 lots went for about $1,800, and included many humorous studies dating from the years when the artist was at the height of his powers, besides several rare etchings and engravings. Among them were some of the original illustrations to "Windsor Castle," "The Court of Queen Anne," and "The Comic Almanack."

Subterranean Telegraph Wires in Germany. — In 1876 the first subterranean telegraph wire was laid down in Germany. Recently, subterranean lines have been completed from Berlin to Cologne, from Cologne to Elberfeld and Barmen, from Frankfort to Strasburg, and from Hamburg to Cuxhaven. Altogether the length of these lines now amounts to 1,554 English miles. Most of the cables consist of seven wires, very few of four only. The difficulties encountered in laying down the cables in marshy or rocky ground, along the streets of large towns, across, or rather under, rivers, and through fortifications, have all been successfully overcome. Next year six other lines are to be laid down, and then the projected system of subterranean telegraphic communication throughout the German empire will be almost complete. The cost of the lines already laid down amounts to about $3,039,000.

Recent Improvements at Rome. — An exchange says: "The improvement of the Roman Campagna has been long talked of. While talk is likely still to continue for some time to come, there is encouragement in the fact that a bill has just passed the Chamber of Deputies, by a majority of 126 in a house of 239 members, which is intended to further such a scheme. The report on which the bill is based points out that it will be necessary, in order to render the lands healthful and fertile, to subdrain the soil so deeply as to reach the bottom of the tufa formation, for the purpose of getting rid of the subterraneous water, and at the same time to provide a system of irrigation for the surface. The extreme undulation of the surface would make it necessary that the canals supplying such irrigation should be exceedingly long and tortuous. It is further remarked that the enormous masses of water which were poured into ancient Rome by the old aqueducts became, when the population was greatly diminished and the aqueducts went to ruin, a means of saturating the subsoil with water which there was no normal means of getting rid of. Added to these causes, there are the frequent inundations of the Tiber; the vast superficies of the Pontine and other marshes; the peculiar nature of the coast for about 120 miles, which renders it especially liable to infiltration; the low level of the neighboring plains, in some places absolutely below that of the sea level; and lastly, the mixture of stagnant or fresh with salt water. The opinion is expressed that the malaria is the product of the locality where it exists; that people tread upon it with their feet; that it does not diffuse itself to great distances from its sources, and that it does not rise to any great height from the soil. It is proposed in the bill just passed that all the proprietors of lands within the zone to be improved be obliged to undertake cultivation to a high degree (*la colura intensira*), their taxes for such lands being remitted and a Bank of Agricultural Credit being established for the payment of premiums to such persons as shall best prosecute their work. This bank will also lend money, and establish a model farm. It is intended that the twenty ancient roads which traversed the Campagna in former times shall be retraced and supplemented by as many cross roads as may be needed to render every portion of the area to be operated on easily accessible. And 'if the Roman legions constructed the ancient roads in great part, no one would see any objection to the employment of the army in so urgent and necessary a work.'"

An Old Street gone. — In completing the Boulevard St. Germain, one of the longest thoroughfares on the left bank of the Seine, in Paris, it was found necessary that several interesting and noted houses in the Rue de l'Ancienne Comédie should be destroyed. This ancient street is only 150 yards long, but it has been inhabited by many persons of celebrity. In the house No. 2, which was built 300 years ago, lived for many years Dr. Guillotin, the inventor of the famous instrument of capital punishment in France. No. 5 was inhabited by Cambaceres, the High Chancellor of the First Empire, who died there in 1824. Horace Vernet, the painter, and Baron Gros at one time had studios at No. 4.

A Novel and Simple Method of taking Specific Gravities. — M. Gannal has recently devised a means of determining exactly, and with the greatest facility, the specific gravity of all liquids. With his "*densimètre hydrostatique*," all calculation is obviated, and the specific gravity is ascertained by simply reading the weight on the balance. This useful and ingenious apparatus is made in the form of an olive, so that bubbles of air shall not attach themselves to its sides. The olive (whether made of glass or metal) has a volume exactly equal to one decimal subdivision of a cubic metre. There are two different methods employed in the practical use of the apparatus: First, we may suspend it on the platform of the balance, and after having produced an equilibrium we plunge it into the liquid; the equilibrium is then destroyed by the loss of weight of the olive, and the number of grammes which it is necessary to add to the scale pan to restore the equilibrium is the exact specific gravity of the liquid. Second, or we may equally well adopt the following plan: We put the liquid whose specific gravity we desire to ascertain in a glass vessel on one pan of the balance; we balance the scale pans, and then suspend the olive in the liquid by means of a fine thread. The equilibrium is destroyed, and the scale descends on the side on which the olive is suspended, and the weight which it is necessary to place in the other pan to restore the equilibrium is equal to the specific gravity of the liquid. This apparatus will determine the density of all liquids, whether they be heavier or lighter than water, whether they be acids, alcohols, or syrups. It advantageously supersedes the areometers; it is not fragile, and it gives the indications with an exactitude depending on the sensibility of the balance employed. The work is reduced to a simple weighing and reading of the weights on the balance. M. A. Gannal has constructed instruments of one hundred cubic centimetres, and ten cubic centimetres only. The larger apparatus is the one which will prove the most convenient and the most needed in commercial and industrial determinations. With this instrument, and a balance sensitive to one decigramme, we may determine the density to the thousandth degree. — *Les Mondes.*

The Streets of Omaha. — It was intended that Omaha should be a beautiful city, and one means to that end was to give most of the streets a width of a hundred feet. It is found, however, that such streets are inordinately expensive to grade, pave, and keep in repair, besides being troublesome, and the common council is considering a proposition to make them narrower.